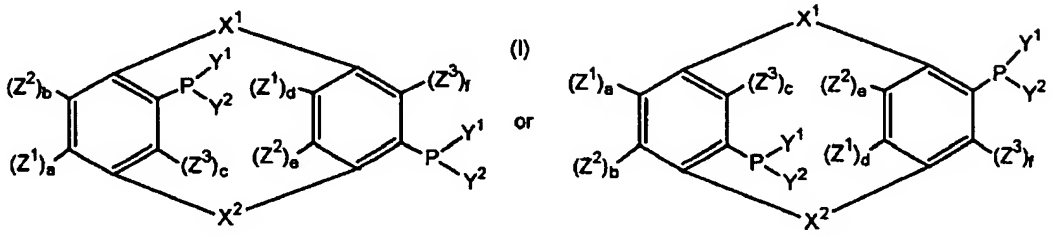
Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Original) A substituted paracyclophane of formula (I)



wherein X^1 and X^2 are linking groups comprising between 2 to 4 carbon atoms, Y^1 and Y^2 are selected from the group consisting of hydrogen, halide, oxygen, nitrogen, alkyl, cycloalkyl, aryl and~~or~~ heteroaryl, Z^1, Z^2 and Z^3 are substituting groups that optionally contain functional groups, a, b, c, d, e and f are 0 or 1, and (a + b + c + d + e + f) = 1 to 6.

2. (Original) A substituted paracyclophane according to claim 1 wherein X^1 and X^2 are both $-C_2H_4-$.

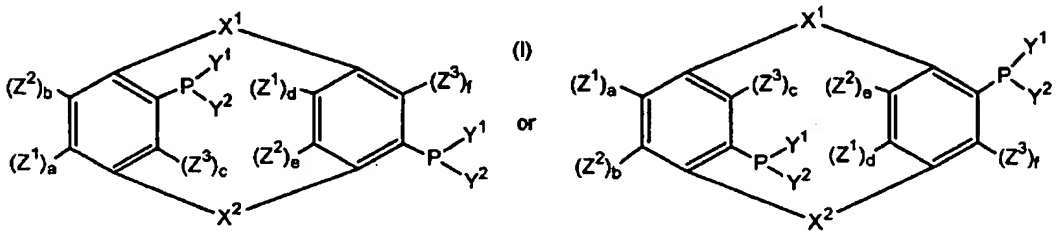
3. (Currently Amended) A substituted paracyclophane according to claim 1 ~~or claim 2~~ wherein at least one of Z^1, Z^2 ~~or~~ and Z^3 ~~are~~ is a substituting groups selected from C1-C30 branched or linear alkyl or phenyl, naphthyl or anthracyl groups.

4. (Currently Amended) A substituted paracyclophane according to ~~any one of claims 1 to 3~~ claim 1 wherein at least one of Z^1, Z^2 and~~or~~ Z^3 ~~are~~ is a substituting groups comprising one or more functional groups selected from the group consisting of halide, hydroxyl, alkoxy, carbonyl, carboxyl, anhydride, methacryl, epoxide, vinyl, nitrile, nitro, sulphate, sulphonyl, mercapto, amino, amine, imine, amide and imine.

5. (Currently Amended) A substituted paracyclophane according to ~~any one of claims 1 to 4~~ claim 1 wherein (a + b + c + d + e + f) = 1 or 2.

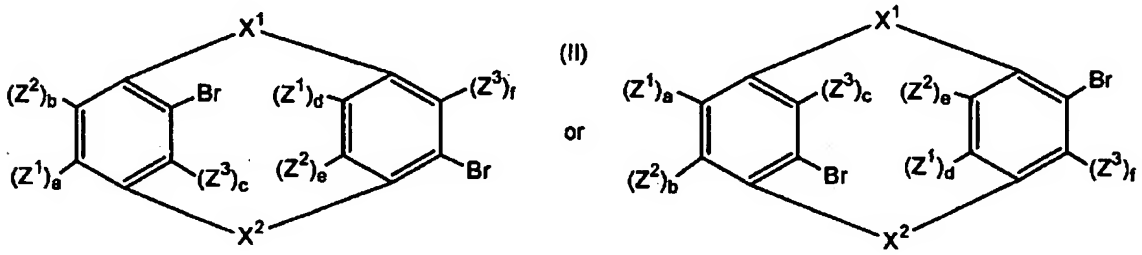
6. (Currently Amended) A substituted paracyclophane according to ~~anyone of claims 1 to 5~~ claim 1 wherein (a + b + c) = 1 ~~and /~~ or (d + e + f) = 1, or both of these.

7. (Original) A method for preparation of a substituted paracyclophane of (I) by,



(I)

(a) performing a substitution reaction on a pseudo-ortho dibromoparacyclophane to form an intermediate substituted pseudo-ortho dibromoparacyclophane of formula (II), and

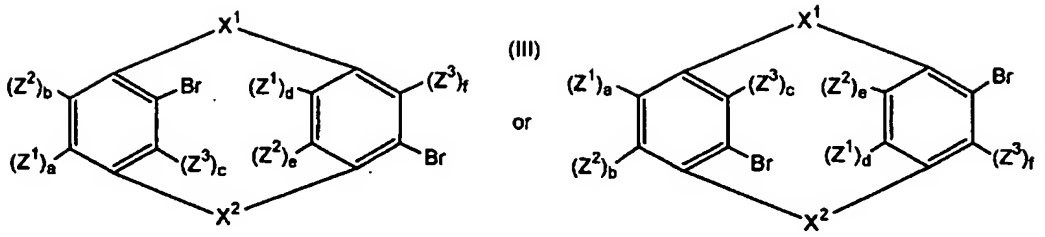


(II)

(b) reacting the substituted pseudo-ortho dibromoparacyclophane with a phosphorus compound comprising $P(Y^1Y^2)$, wherein X^1 and X^2 are linking groups comprising between 2 to 4 carbon atoms, Y^1 and Y^2 are selected from the group consisting of hydrogen, halide, oxygen, nitrogen, alkyl, cycloalkyl, aryl or heteroaryl, Z^1, Z^2 and Z^3 are substituting groups that optionally contain functional groups, a, b, c, d, e and f are 0 or 1, and (a + b + c + d + e + f) =1 to 6.

8. (Original) A method according to claim 7 wherein the substitution reaction is a Lewis-acid mediated electrophilic substitution.

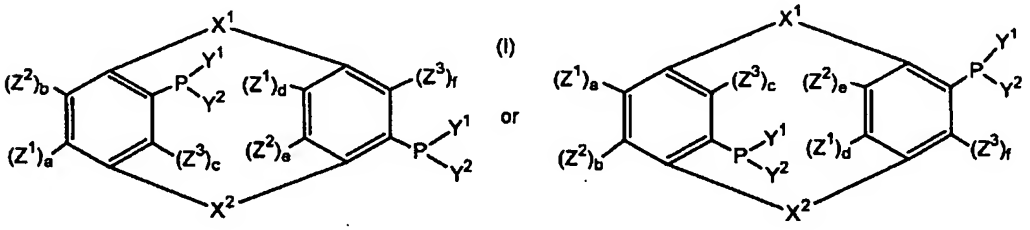
9. (Currently Amended) A substituted pseudo-ortho dibromoparacyclophane of formula (III)



wherein X^1 and X^2 are linking groups comprising between 2 to 4 carbon atoms, Z^1, Z^2 and Z^3 are substituting groups at least one of which comprises a functional group selected from the group consisting of hydroxyl, alkoxy, carboxyl, anhydride, methacryl, epoxide, vinyl, nitrile, nitro, sulphate, sulphonyl, mercapto, sulphide amino, amine, imine, and imide, a, b, c, d, e and f are 0 or 1, and (a + b + c + d + e + f) =1 to 6.

10. (Original) A substituted pseudo-ortho dibromoparacyclophane according to claim 9 wherein the functional group is a carboxylic acid functional group or an amino functional group.

11. (Currently Amended) A metal complex comprising the reaction product of a metal compound and a substituted paracyclophane of formula (I)



wherein X^1 and X^2 are linking groups comprising between 2 to 4 carbon atoms; Y^1 and Y^2 are selected from the group consisting of hydrogen, halide, oxygen, nitrogen, alkyl, cycloalkyl, aryl and~~or~~ heteroaryl, Z^1, Z^2 and Z^3 are substituting groups that optionally contain functional groups, a, b, c, d, e and f are 0 or 1, and (a + b + c + d + e + f) = 1 to 6.

12. (Original) A metal complex according to claim 11 wherein the metal compound is a compound of palladium (Pd), platinum (Pt), rhodium (Rh), iridium (Ir) or ruthenium (Ru).

13. (Currently Amended) A metal complex according to claim 11 ~~or claim 12~~ wherein the substituted paracyclophane (I) is substantially enantiomerically-pure.

14. (Currently Amended) A metal complex according to ~~any one of claims 11 to 13~~ claim 11 wherein the metal complex is supported on a solid support.

15. (Currently Amended) A method of asymmetrically hydrogenating a substrate, comprising contacting the substrate with hydrogen in the presence of a catalytic amount ~~The use~~ of a metal complex according to ~~any one of claims 12 to 14~~ claim 12 ~~as a catalyst in an asymmetric hydrogenation reaction~~.

16. (Currently Amended) ~~The use of~~ A method of catalyzing a chemical reaction, the method comprising contacting one or more reactants with a metal complex according to ~~any one of claims 12 to 14~~ claim 12, wherein the chemical reaction is ~~as a catalyst for reactions~~ selected from the ~~list~~ group consisting of carbon-carbon coupling reactions, ~~the~~ enantioselective isomerizations of olefins, asymmetric hydroboration reactions, asymmetric cyclisations of olefinic aldehydes, asymmetric arylation reactions, asymmetric ~~and~~ alkylation reactions, and ~~the~~ aminations of aryl halides according to the ~~(~~Hartwig-Buchwald reaction~~)~~.